

DISCUSSION OF THE AMENDMENT

Due to the length of the specification herein, Applicants will cite to the paragraph number of the published patent application (PG Pub) of the present application, i.e., US 2006/0076866, when discussing the application description, both in this section and in the Remarks section, *infra*, rather than to page and line of the specification as filed.

Claim 1 has been amended by incorporating the subject matter of part of Claim 3 therein; by rearranging the recital of the claim elements; by reciting the barium-supplying source as --comprising-- the recited complex oxide; and by reciting that the barium-supplying source is as a covering layer, as supported in the specification at paragraph [0044].

Claims 2-4 have been canceled.

Claim 8 has been amended to recite an apparatus, rather than a use for the electron source. Claims 9 and 10 have each been amended to depend on Claim 1.

New Claims 11-19 have been added. Claims 11-14 are supported by above-amended Claim 1. Claims 15-19 are supported by above-amended Claim 8.

No new matter is believed to have been added by the above amendment. Claims 1 and 5-19 are now pending in the application.

REMARKS

As recited in above-amended Claim 1, an embodiment of the present invention is an electron source comprising a single crystal needle of tungsten or molybdenum and as a covering layer on a portion of said needle, a barium-supplying source comprising a complex oxide comprising barium oxide, and an oxide of metal other than barium, wherein the complex oxide is at least one complex oxide selected from the group consisting of BaAl_2O_4 , $\text{BaAl}_{12}\text{O}_{19}$, $\text{Ba}_3\text{Sc}_4\text{O}_9$, and BaSc_2O_4 .

The rejections under 35 U.S.C. § 103(a) of Claims 1-2, 4 and 7-10 as obvious over JP 09-270240 (Terui et al '240) in view of Bill. Mater. Sci., Vol. 2, Number 4, November 1980, pp. 265-270 (Bhavani et al), and of Claims 5-6 as obvious over Terui et al '240 in view of Bhavani et al, and JP 2001-325910 (Terui et al '910) and JP 10-154477 (Nishiyama et al), are respectfully traversed. Indeed, these rejections are now moot in view of the above-discussed amendment, which incorporates part of the subject matter of Claim 3, not subject to these rejections, into Claim 1. Accordingly, it is respectfully requested that these rejections be withdrawn.

The rejections under 35 U.S.C. § 103(a) of Claims 1-4 and 7-10 as obvious over Terui et al '240 in view of US 6,432,325 (Hamada et al) and Bhavani et al; of Claims 5-6 as obvious over Terui et al '240 in view of Hamada et al and Bhavani et al, further in view of Terui et al '910 and Nishiyama et al; of Claims 1-5 and 7-9 as unpatentable over Hamada et al in view of Terui et al '240; and of Claim 6 as unpatentable over Hamada et al in view of Terui et al '240, are all respectfully traversed.¹

¹ That the new prior art, i.e., Bhavani et al, is not listed in the statement of the rejection is irrelevant; reliance thereon is all that is necessary. "Where a reference is relied on to support a rejection, whether or not in a 'minor capacity,' there would appear to be no excuse for not positively including the reference in the statement of rejection." *In re Hoch*, 428 F.2d 1341, 166 USPQ 406, 407 n.3 (CCPA 1970). See also MPEP 706.02(j).

Hamada et al discloses an electron-emitting electrode for discharge lamps, etc., i.e., an electron source, comprising a complex oxynitride of a first and second metal, wherein the first metal is preferably Ba and the second metal is selected from a group of metals which includes Zr, Ti and Hf, which complex oxynitride is shown to be superior to the corresponding oxide (Table 1), although the oxide may be present with the oxynitride in the electron source (column 4, line 47ff).

The Examiner relies on JP '240 for the presently-recited structure of a single crystal needle of tungsten; JP '910 and JP '477 for electrode shape and orientation; and Bhavani et al for the use of a positive potential for "reducing the oxidation" of metals.

The Examiner additionally relies on JP '240's disclosure of a solid solution of zirconium oxide and group 2A metal oxide, such as barium oxide, as the same thing as a complex oxide of such oxides. However, a solid solution is different from a complex oxide.

Nevertheless, none of the applied prior art discloses or suggests the complex oxide of above-amended Claim 1. Accordingly, it is respectfully requested that these rejections be withdrawn.


All of the presently-pending claims in this application are now believed to be in immediate condition for allowance. Accordingly, the Examiner is respectfully requested to pass this application to issue.

Customer Number
22850

Tel: (703) 413-3000
Fax: (703) 413 -2220
(OSMMN 08/07)

Respectfully submitted,

OBLON, SPIVAK, McCLELLAND,
MAIER & NEUSTADT, P.C.
Norman F. Oblon



Harris A. Pitlick
Registration No. 38,779